

REMARKS

Claims 1-10 are pending. Claims 1, 3 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Claims 1-5 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over DI MECO et al. (US2002/0015825) in view of OSAKO et al. (EP 1,052,425) and claim 6 further in view of DI MECO et al. (EP 1,157,813).

Indefiniteness

Claims 3 and 4 are amended to delete “second” and should now allowable under Section 112(1).

Claims 1 and 8 are amended to change “mainly” to “for more than 50%” which is supported in the specification at page 7, lines 15-16.

Applicant traverses the objection to “average.” “Average” is a very definite term, particularly when directed to sizes of particles. This terminology was accepted in corresponding European Patent EP 1 682 797 B1. See claim 1.

Accordingly, claims 1, 3 and 8 are definite under 35 U.S.C. 112(1).

Novelty

In the following, please find the differences in bold between actual claim 1 and the cited prior art in the name of OSAKO:

Claim 1 recites:

A toothed belt (1), comprising a body (2) and a plurality of teeth (4); said teeth being coated with a fabric (5);

said fabric (5) being **coated on the outside with a resistant LAYER (8);**

said resistant layer (8) comprising

a fluorinated plastomer

an elastomeric material

and a vulcanizing agent

said fluorinated plastomer being present in said **resistant layer (8)** in an amount [higher] by weight greater than that of said elastomeric material

said toothed belt being characterized in that said fluorinated plastomer is formed [mainly] for more than 50% by particles of size smaller than 10 μm ,

and in that said resistant layer (8) is made to adhere directly to said fabric.

As far as the Examiner's objections on novelty and inventiveness: According to the Webster dictionary layer means "**one thickness, course, or fold laid or lying over or under another**".

This definition perfectly applies to the present invention which claims a resistant layer coated **outside** the fabric and therefore distinct from it. See also the Example 3 above Table 3 of the specification (page 11, lines 5-6) stating "Said resistant layer has a thickness of 0.037 mm"

On the contrary, the composition of OSAKO is clearly indicated as an RFL composition, i.e. a **liquid treatment** that permeates the fabric.

Please note that the OSAKO treatment is liquid because comprises also resorcin, formaldehyde and a lot of **water** (see ex. C5 of table 3): an aqueous dispersion (see paragraph 31).

The resistant layer of the present invention does not and cannot comprise water! Water is immiscible with the combination of constituents of the resistant layer recited in claim 1. And a solution made of more than 80% of water as taught by OSAKO cannot form a layer "outside of a fabric" as recited by claim 1.

A liquid treatment as taught by OSAKO cannot form a layer, and on the contrary it permeates the fibres of the fabric and thus it is totally different from a distinct layer. If the Examiner persists in this rejection, Applicant respectfully requests the Examiner to clarify if he deems that the liquid treatment of OSAKO may form a layer taking also into account the fact

that the supposed resistant layer of OSAKO has no number and it is not identifiable in the figures.

Contrary to the statement that the RFL liquid treatment of OSAKO , i.e. the mixture, may constitute a layer, it is said in paragraph 12 of OSAKO that: “The fibers in the fiber layer (the fabric of the preset invention) may be surrounded by the mixture between the first and second surfaces.”

Therefore present claim 1 differs from OSAKO firstly because it claims a distinct **layer** and secondly because this layer is placed on the **outside** of the fabric.

Summarizing the above because of the different chemical compositions

OSAKO LIQUID

Present invention SOLID

Therefore **claim 1 is indubitably new** in view of OSAKO because OSAKO does not describe a distinct layer on the outside of the fabric. Method claim 8, which produces such distinct layer, is likewise novel.

Further, the Examiner appears to assume that, since the average size of fluorinated plastomer particles is bigger than 100 μm , the particles could not be dispersed evenly [para. 0062 and 0063], the average size of fluorinated plastomer particles is smaller than 10 μm .” (Action, page 3, lines 15-16).

We respectfully note that the Examiner is incorrect in making this assumption because the particle dispersion in OSAKO is due to the fact that the composition in OSAKO is a dispersion in water which is totally different from the composition of the present invention which forms a layer and has no water.

Thus, a person skilled in the art would have no reason to choose OSAKO and attempt to combine it with DI MECO to obtain the presently claimed invention.

Further, claim 1 of the present invention recites also a **vulcanizing agent** (for instance a peroxide) which it can not be found in OSAKO .

As it is described in the text at page 8 line 34 “The resistant layer 8 further comprises a peroxide as vulcanizing agent. The peroxide is added normally in an amount comprised between 1 and 15 parts by weight per 100 parts of elastomeric material. The resistant layer 8 is applied directly on the fabric 5, preferably via spreading on the fabric 5 itself. Next the toothed belt is vulcanized.”

Please note that the Application clarifies that the peroxide is a chemical substance contained in the resistant layer and that improves the vulcanization, but the Applicant is open to any suggestion from the Examiner on how to modify claim 1 to render clear the fact that the resistant layer must be formed at least by three different substances, i.e. a plastomer, an elastomer and a vulcanizing agent.

Non-obviousness

As regards non-obviousness, please note the following:

The problem at the base of OSAKO is explained in the description of the present specification (PCT/EP2004/052559) from page 1 line 35 to page 2 line 15: “The fabric is normally treated with **an adhesive**, for example resorcinol and formaldehyde lattice (RFL of OSAKO) to increase the adherence between the body and the fabric itself. There are moreover employed a number of methods (such as the one of DI MECO) **for increasing resistance to wear of drive belts by modifying the structure of the coating fabric or performing different treatments on the fabric, for example, treatments of the fabric with halogenated polymers (i.e. also PTFE)**. Said treatments do not, however, lead to any great increase in resistance to wear in so far as the coating fabric of the toothed belt, in use, constitutes in any case the working surface (as in OSAKO).”

As it is further explained in the description said treatments, as the treatment of OSAKO , “do not, however, lead to any great increase in **resistance to wear** in so far as the coating fabric of the toothed belt, in use, constitutes in any case the working surface.”

This problem has been addressed in part by EP1 157 813, i.e. DI MECO which is the closest prior art, and that describes a resistant layer similar to the one used in the present invention thus it results that: “The use of said resistant layer has enabled excellent results in terms of increase in resistance to wear to be obtained”

The problem at the base of the present invention is that “The resistant layer of DI MECO is formed via the use of **a fluorinated plastomer comprising particles which have an average size of 20 µm or more and are in the form of agglomerates**. Consequently, said agglomerates have sizes such as **to entail a difficult mixability** in solution with the elastomer. The agglomerates are hence also present in the final resistant layer that is consequently non-homogeneous, and said lack of homogeneity can generate a high level of noise.” (See specification page 2, line 29 to page 3, line 2.) This problem has been solved according claim 1 of the present using a fluorinated plastomer formed mainly by particles of average size smaller than 10 µm, and in that said resistant layer (8) is made to adhere directly to said fabric.

Thus, **claim 1 is inventive over DI MECO** which is the closest prior art already acknowledged in the text.

The skilled in the art would have **not considered OSAKO which describes a liquid composition** (an aqueous dispersion, see OSAKO paragraph 31) to solve the problem of the mixability of the PTFE in solution with the elastomer and thus **claim 1 is also inventive over the combination of DI MECO and OSAKO. Method claim 8 is likewise allowable over DI MECO and OSAKO.**

Claims 2 to 6 are dependant from claim 1, and therefore allowable with claim 1. Similarly, claims 9 and 10 are allowable with claim 8.

Also, claims 7 and 9 are allowable over the cited prior art because it is new and inventive to apply by spreading the distinct resistant layer of claim 1 (or 9) above the fabric of the toothed belt. In this case, the closest prior art in this case is represented by DI MECO in which the layer is formed separately and coupled to the fabric by means of calender (paragraph 32 of DI MECO).

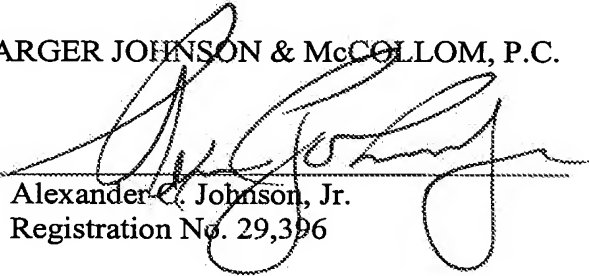
In review of the foregoing amendments and remarks, the application should be in condition for allowance. If any questions remain, the Examiner is requested to call the undersigned.

Respectfully submitted,

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Customer No.

MARGER JOHNSON & McCOLLOM, P.C.

By


Alexander C. Johnson, Jr.
Registration No. 29,396

210 S.W. Morrison Street, Suite 400
Portland, Oregon 97204
Telephone: (503) 222-3613